

FIG. 1

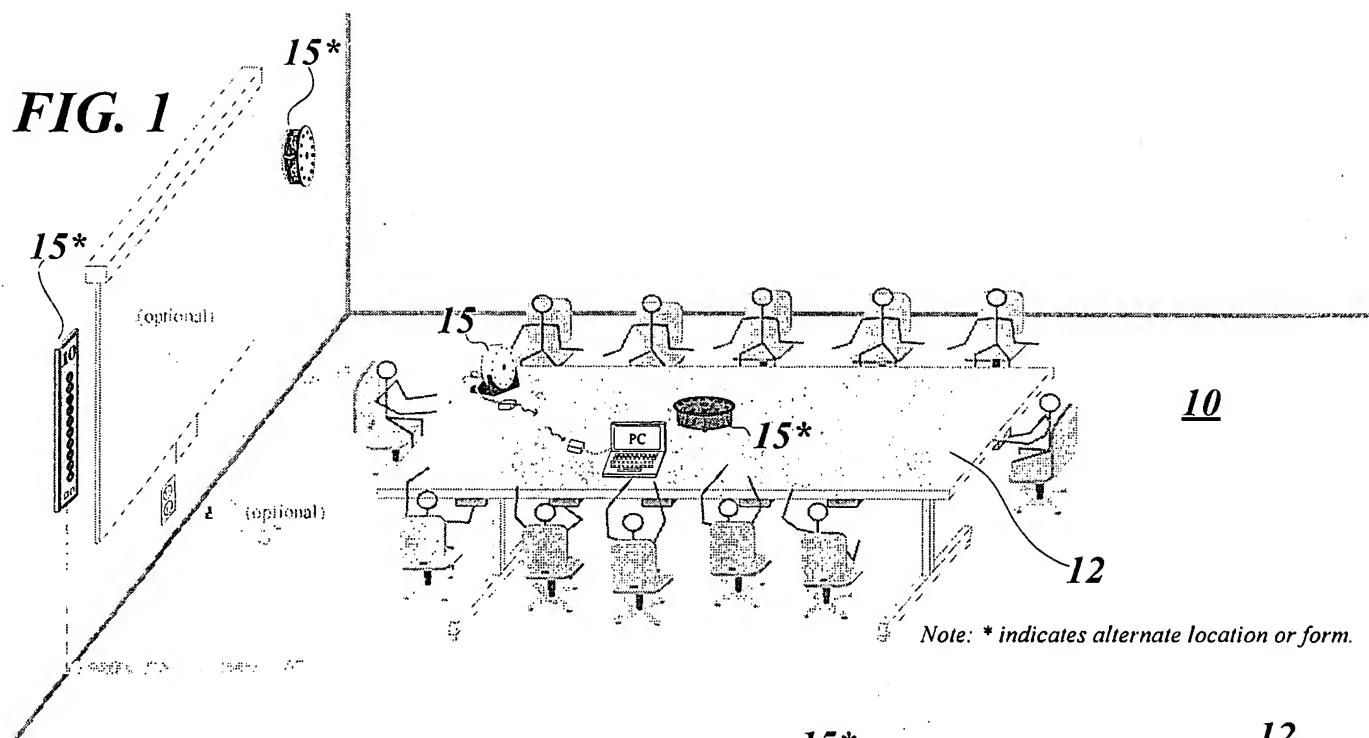


FIG. 2

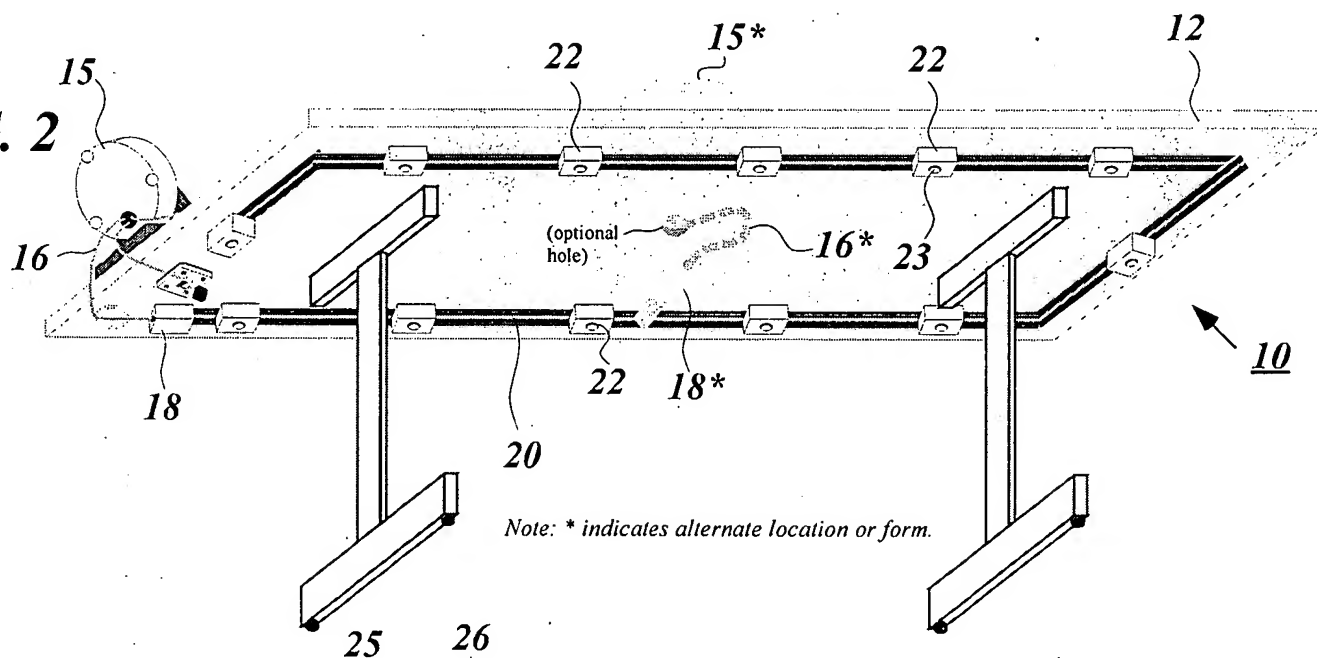
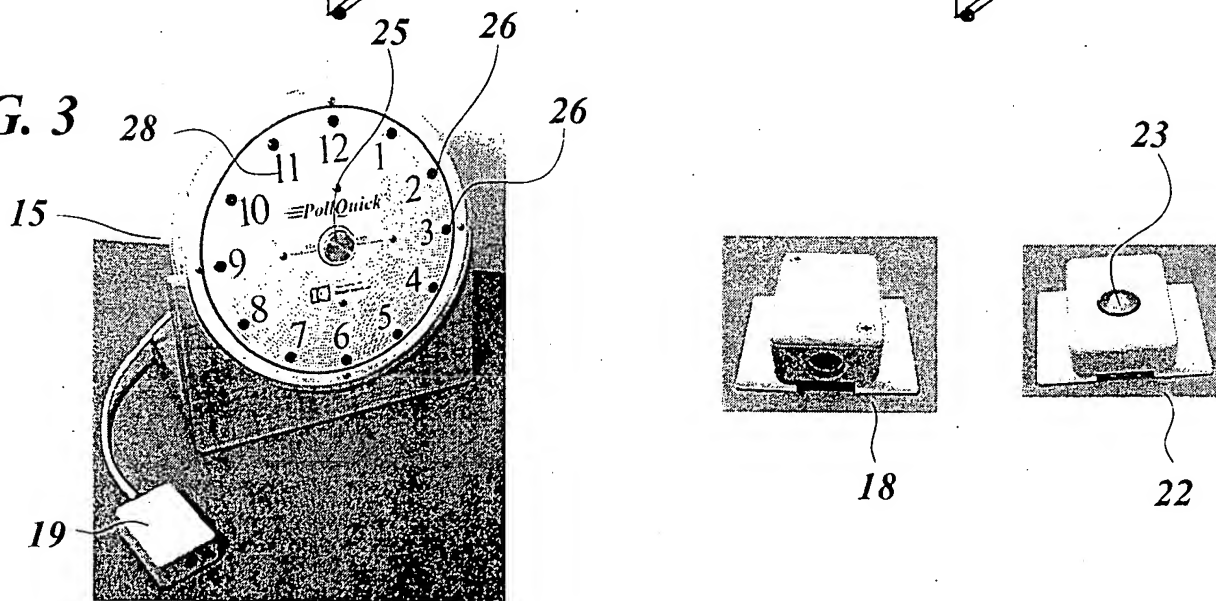
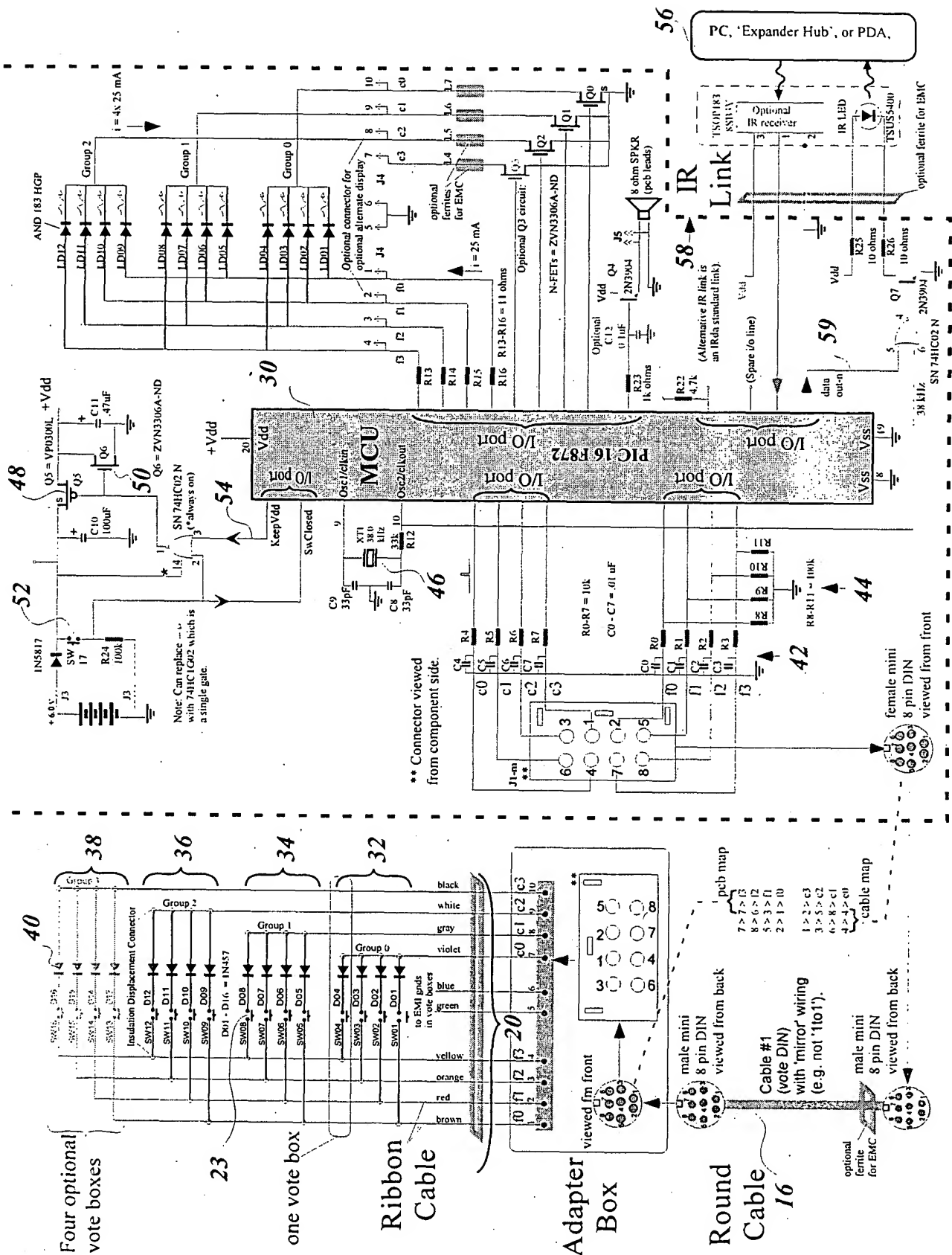


FIG. 3



Main Board



More Multiplexing can support 40 vote boxes, or more.
 (e.g. 4 groups of 5 [times two] = 40 vote boxes)

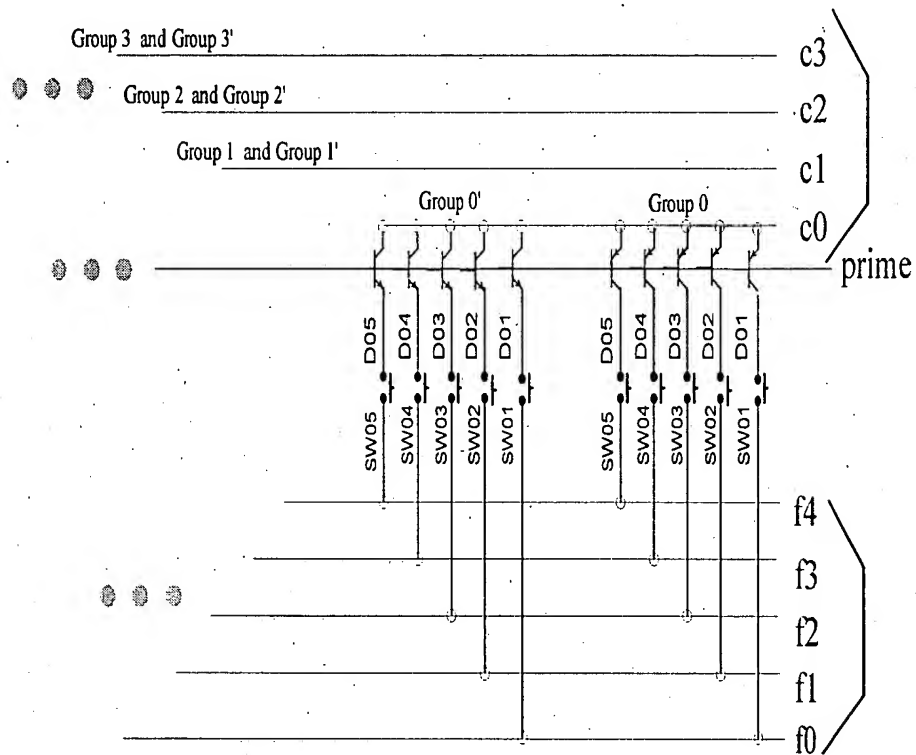


FIG. 4B

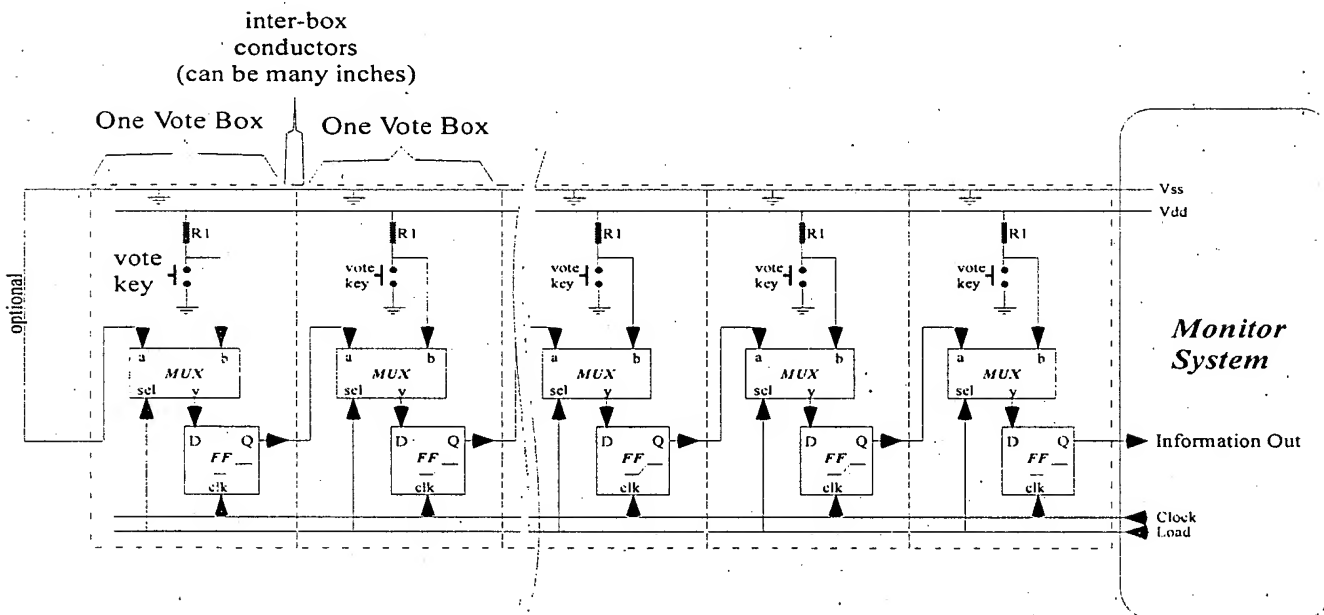
A Shift Register Version

Pros:

1. Can extend to large number of (identical) vote boxes.
2. All vote boxes are identical.
3. Data out (each Q) drives only small loads.

Cons:

1. Logic (ICs) required in each vote box.
2. Power (Vdd, Vss) must be supplied to the ICs.
3. More than 2 contacts per votebox are critical.
4. The clock drives multiple loads (unless made asynchronous).
5. Slow data out for given clock frequency (unless parallel paths used. See 3 below).
6. More FCC noise issues.
7. Press-on tool is more complicated (added cutting mechanism) since one or more conductors must be segmented.



Note: Simple refinements are possible:

1. We can supply Vdd (for FF & Mux) via the clock (rectified & LP filtered).
2. We can reduce the number of inter-box conductors by encoding "load" (for example) on other conductors. Even just 2 conductors can suffice.
3. More conductors can be used to simultaneously send several bits.
4. A 'counters with digital comparators' approach could replace the 'shift register' (above) approach.

FIG. 4C

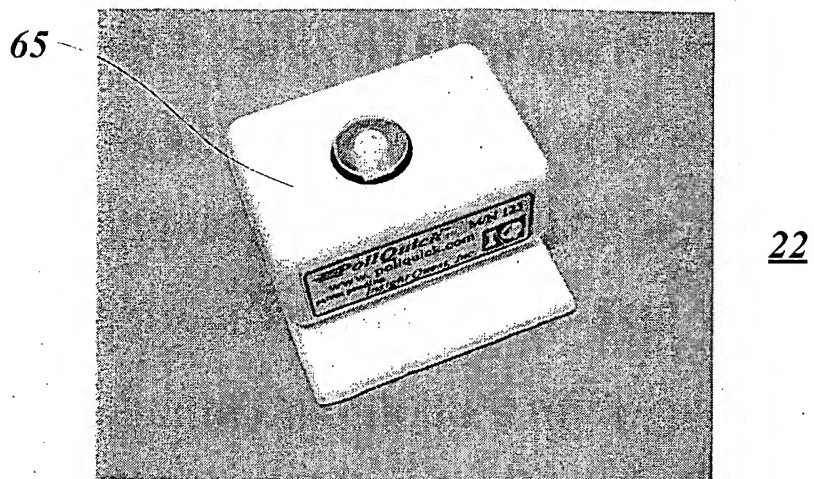


FIG. 5

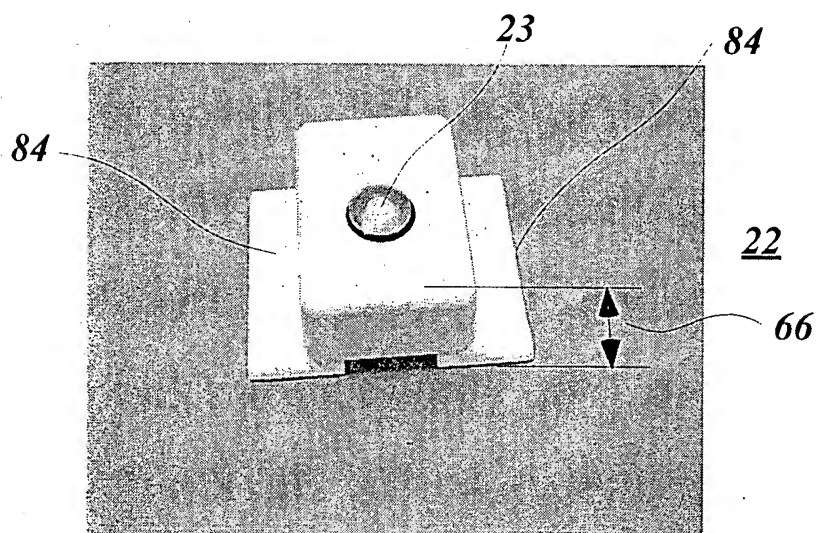


FIG. 6

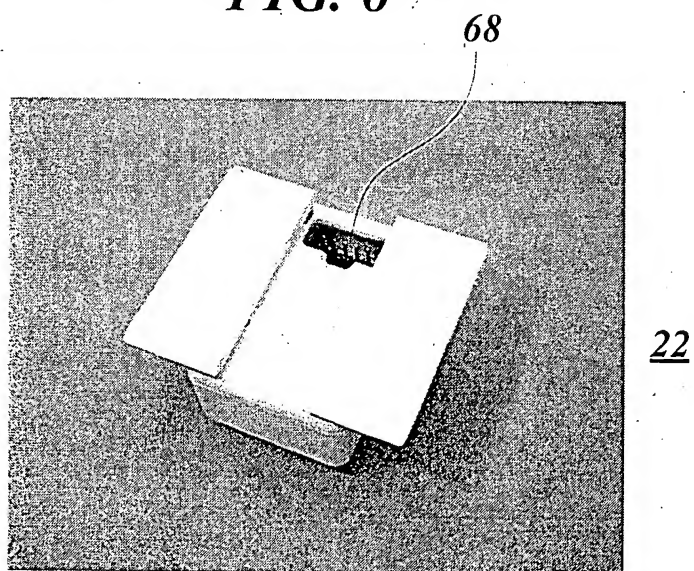


FIG. 7

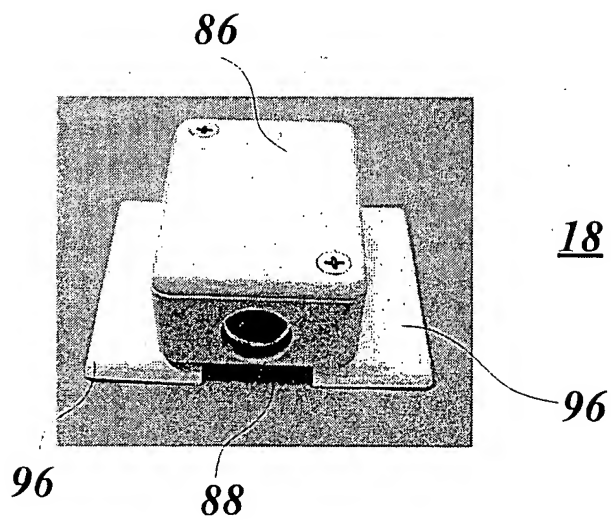


FIG. 8

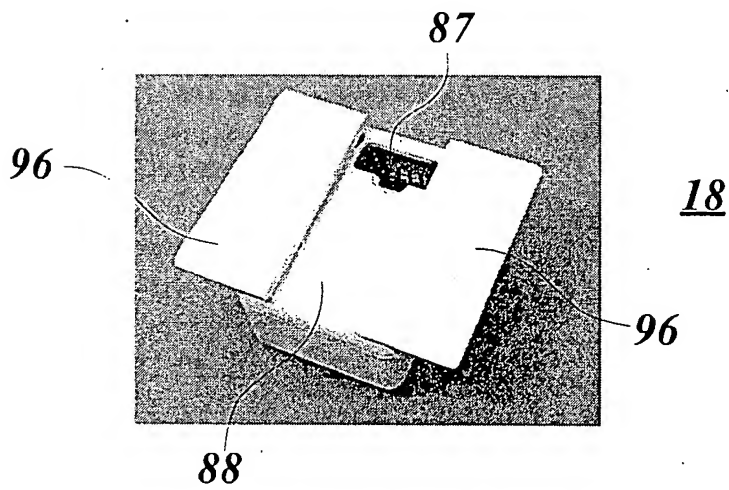


FIG. 9

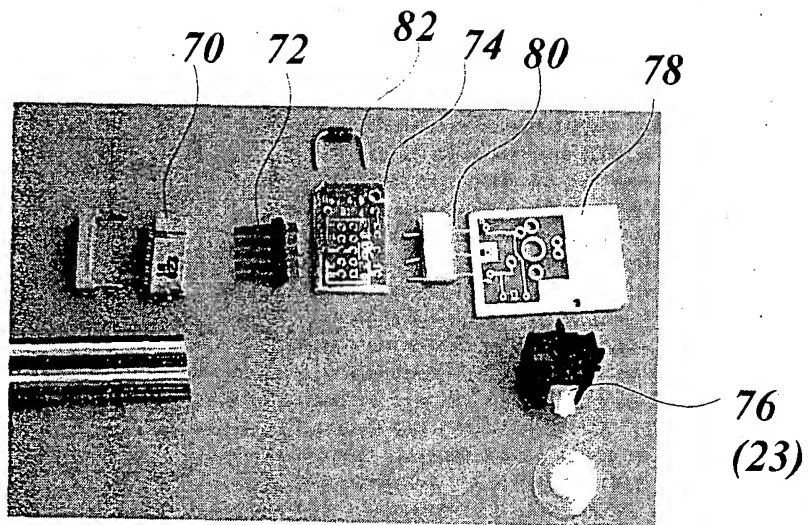


FIG. 10

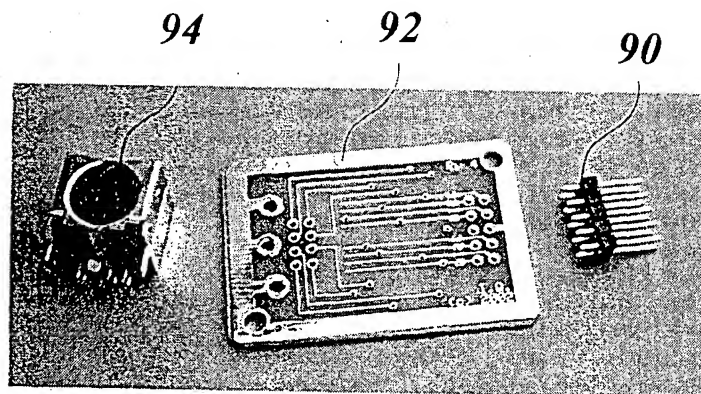


FIG. 11

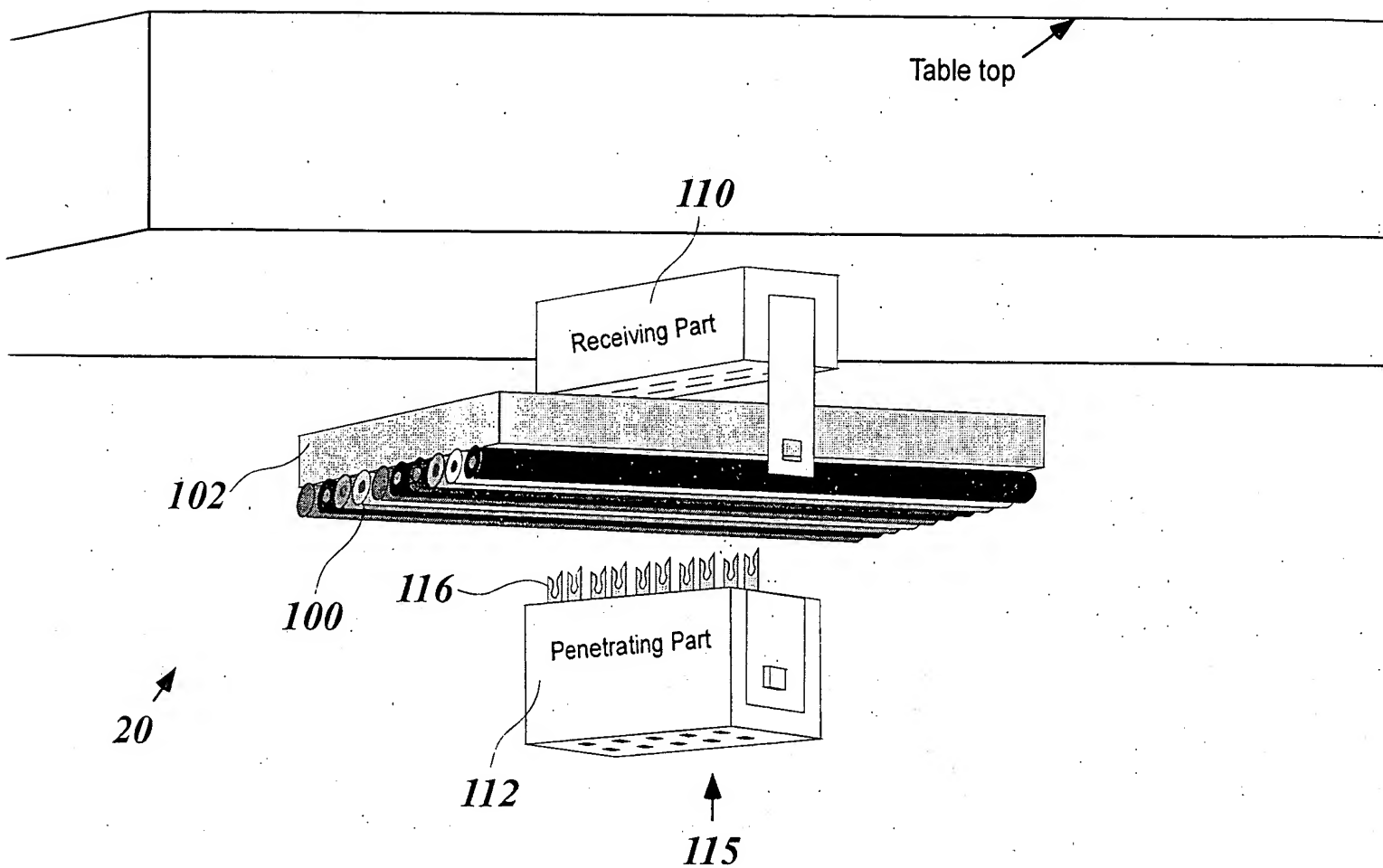


FIG. 12

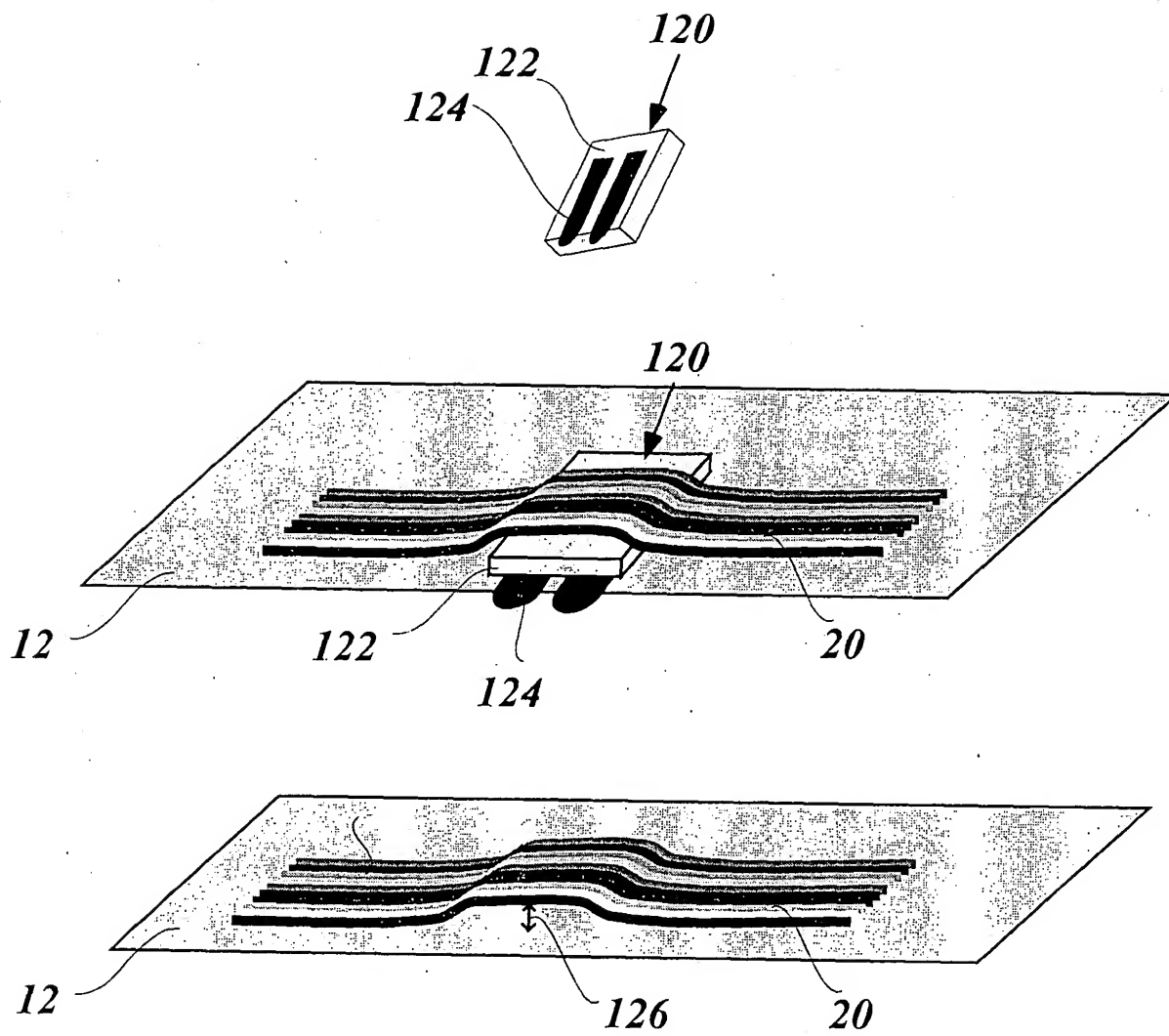


FIG. 13

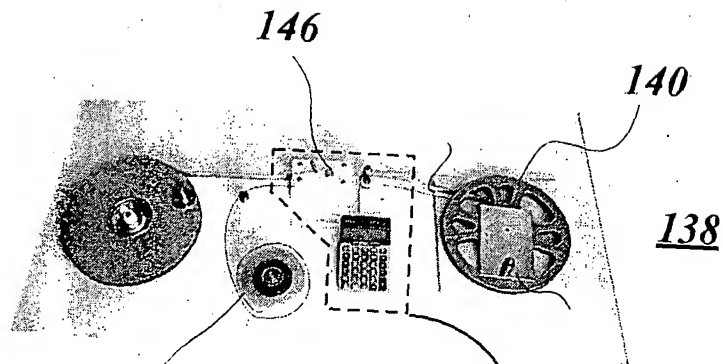


FIG. 14

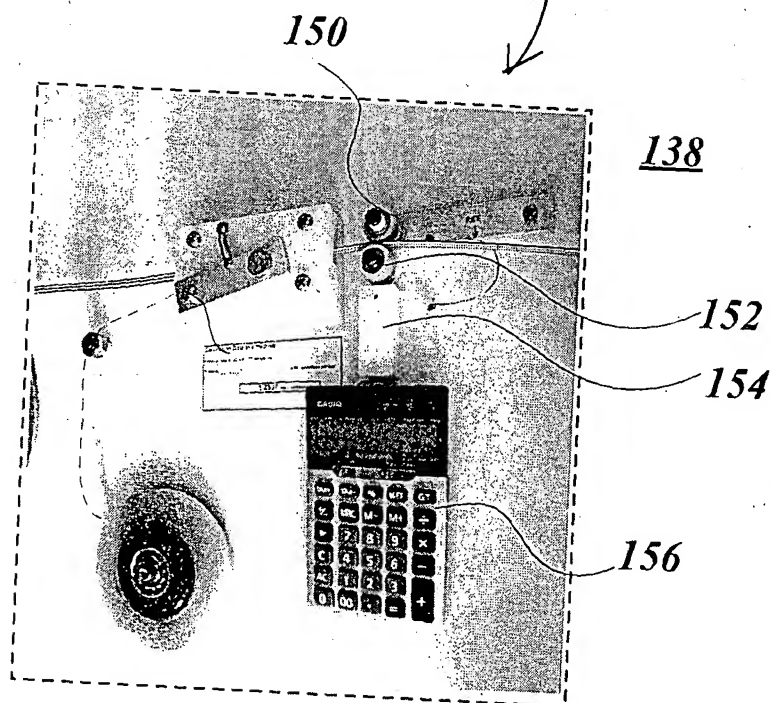


FIG. 15